DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

INITIAL STATEMENT OF REASONS

TITLE 13 CALIFORNIA CODE OF REGULATIONS, DIVISION 2, CHAPTER 6
AMEND ARTICLE 2.7, SECTION 1159

ROUTES FOR THE THROUGH TRANSPORTATION OF HIGHWAY ROUTE CONTROLLED QUANTITY SHIPMENTS OF RADIOACTIVE MATERIALS (CHP-R-16-01)

PURPOSE OF REGULATIONS AND PROPOSED AMENDMENTS

The California Highway Patrol (CHP) proposes to amend regulations in Title 13 of the California Code of Regulations (CCR); related to designated routes for the Through Transportation of Highway Route Controlled Quantity (HRCQ) shipments of Radioactive Materials (RAM).

Pursuant to Section 33000 of the California Vehicle Code, Division 14.5, the CHP shall adopt regulations specifying the routes to be used in the Through Transportation of HRCQ RAM. Proposed changes are developed to enhance the public health and safety and have been consulted with the State Fire Marshall (SFM), California Department of Public Health (DPH), California Department of Transportation (Caltrans), Southern California Association of Governments (SCAG), and major HRCQ RAM manufacturers and carriers.

PURPOSE OF AMENDMENTS

The proposed amendments will add transportation routes between existing designated routes and the Long Beach/Los Angeles (LB/LA) Ports.

Rationale: While the HRCQ RAM routes were designated and became effective in 1994, the section of Interstate (I)-5 between I-210 and I-605 was not included in the existing routes. The intent was to avoid highway commercial vehicles transporting HRCQ RAM through the heavily populated city of Los Angeles. However, in 1994, HRCQ RAM did not specify which highways should be used when entering or exiting California via the LB/LA Ports, which are the major ports to be used in the state for the transportation of HRCQ RAM. Since no routes were designated for HRCQ RAM to be transported between the existing designated routes and the LB/LA Ports, many carriers have since planned to use sections of I-10 and I-110 traversing through the southern part of downtown Los Angeles.

However, Title 49 of the Code of Federal Regulations (CFR) Section 397.101 Requirements for Motor Carriers and Drivers (a)(1) and (2) requires that the routes to be used must minimize radiological risk to the public considering accident rates, transit time, population density, and

other relevant factors. Title 49 CFR Section 397.101(c)(2) also requires that any non-designated route selected for pickup and delivery must be the shortest distance. Specifically, Title 49 CFR 397.101(b)(2) states, "An Interstate System bypass or Interstate System beltway around a city, when available, shall be used in place of a preferred route through a city, unless a State routing agency has designated an alternative route." In order to eliminate the highways to be used for the transportation of HRCQ RAM through the densely populated downtown Los Angeles area, a preferred route connecting the existing designated routes and the LB/LA Ports needs to be evaluated and specified in Title 13 CCR Section 1159.

For this purpose, several routes connecting I-10 and the LB/LA Ports were evaluated in compliance with Title 49 CFR. To make the comparison, three routes between I-10 at I-605 and Seaside Freeway (Fwy) at State Route (SR)-47, a location between the LB/LA Port, were considered and analyzed. Beyond the existing designated HRCQ RAM routes, Route 1 takes I-10, I-110, and SR-47; Route 2 utilizes I-10 and I-710/Seaside Fwy; and Route 3 employs I-605, I-105, and I-710/Seaside Fwy to transport HRCQ RAM shipments from El Monte to the LB/LA Ports. These routes are shown in *Figure 1*.

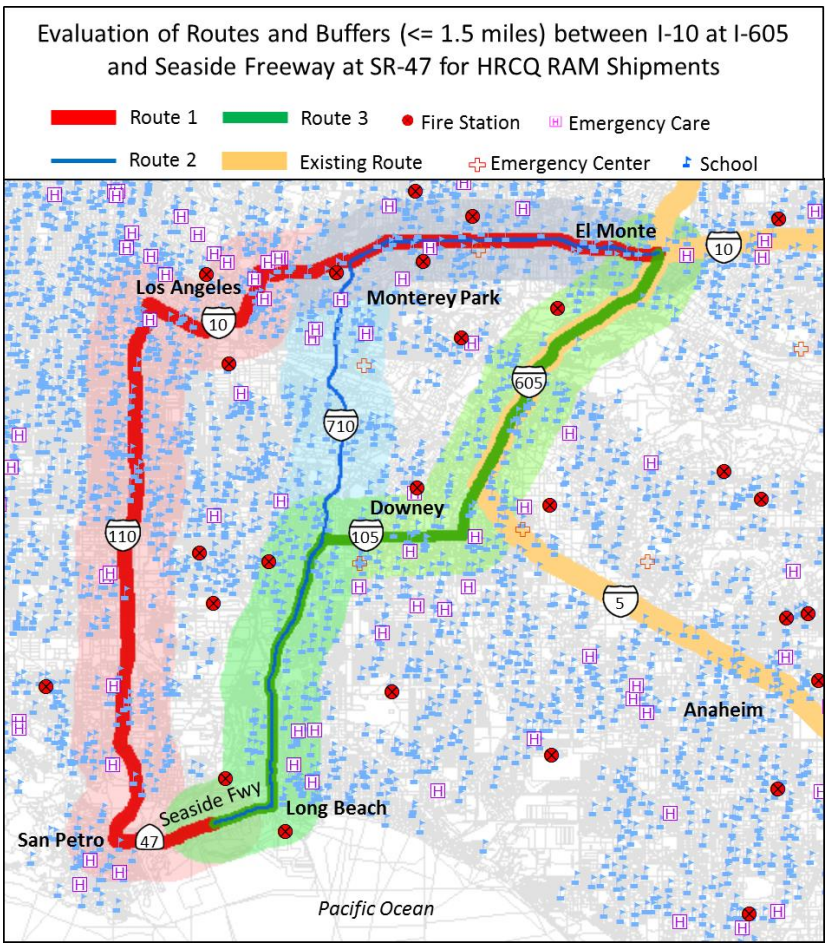

Figure 1: Route 1, 2, and 3 Evaluated for Transporting HRCQ RAM between El Monte and the LB/LA Ports

Title 49 CFR Section 397.103 Requirements for State Routing Designations (a) requires the selection of routes to minimize radiological risk using Guidelines for Selecting Preferred Highway Routes for HRCQ RAM, or an equivalent routing analysis which adequately considers overall risk to the public. This routing assessment uses the combination of the mentioned guidelines (Department of Transportation (DOT)/Research and Special Programs Administration (RSPA)/Hazardous Materials Safety (HMS)/92-02) and the recommended methodologies outlined in the Highway Routing of Hazardous Materials – Guidelines for Applying Criteria (FHWA-HI-97-003) published by the Federal Highway Administration of the United States (US) DOT. While the radiological activities in HRCQ RAM shipments usually demonstrate various levels and the HRCQ RAM shipment packages always reaches the highest protection, this assessment for the selection of a common route applicable to all HRCQ RAM shipments generalizes the differences, as well as the number of drivers facing the limited radiological exposures.

Since time of the day for transporting HRCQ RAM in the state is not currently prescribed in regulations and traffic congestion usually occurs in a particular time of the day, this assessment focuses on the population and housing density since they are generally correlated to the traffic congestion and people gathering along highways. In addition, this assessment uses data including demographic and spatial data retrieved from the 2010 census survey conducted by the U.S. Census Bureau, the traffic volumes reports compiled by Caltrans, and the collision incidents collected in the CHP's Statewide Integrated Traffic Records System (SWITRS) database. The characteristics of these three routes were derived and listed in Table 1, Table 1.1, and Table 1.2.

Table 1: Five Routes Evaluated for Transporting HRCQ RAM between El Monte and the LB/LA Ports

Alternative Routes	Route Length (mile)	Length Difference (mile)	Ratio (Alternates/ Minimum)	Estimated Driving Time (minute)	Ratio (Alternates/ Minimum)	Potential Population Exposure (<= 1.5 mile)	Ratio (Alternates/ Minimum)
Route 1: I-10, I-110, SR-47	40.3	11.2	1.38	57	1.43	5,073,481	2.20
Route 2: I-10, I-710, Seaside Fwy	32.8	3.7	1.13	35	0.88	3,027,805	1.31
Route 3: 1-605, I-105, I-710, Seaside Fwy	29.2	0.0	1.00	31	1.00	2,307,587	1.00
Route 4: 1-605, I-105, I-110, SR-47	39.4	10.2	1.35	44	1.42	3,248,234	1.41
Route 5: 1-605, SR-91, I-110, SR-47	38.2	9.0	1.31	42	1.35	3,462,561	1.50

Table 1.1: Five Routes Evaluated for Transporting HRCQ RAM between El Monte and the LB/LA Ports

Alternative Routes	Potential Population Impact (people per mile)	Ratio (Alternates/ Minimum)	Accident Rate (collisions per million vehicle miles traveled)	Ratio (Alternates/ Minimum)	Relative Population Risk (people per million vehicle miles traveled per road mile)	Ratio (Alternates/ Minimum)
Route 1: I-10, I-110, SR-47	125,815	1.59	0.57	1.00	71,896	1.50
Route 2: I-10, I-710, Seaside Fwy	92,207	1.16	0.68	1.19	62,710	1.31
Route 3: 1-605, I-105, I-710, Seaside Fwy	79,160	1.00	0.66	1.16	52,604	1.10
Route 4: 1-605, I-105, I-110, SR-47	82,528	1.04	0.58	1.02	48,022	1.00
Route 5: 1-605, SR-91, I-110, SR-47	90,724	1.15	0.66	1.15	59,830	1.25

Table 1.2: Five Routes Evaluated for Transporting HRCQ RAM between El Monte and the LB/LA Ports

Alternative Routes	Relative Population Risk (people per million vehicle miles traveled along route)	Ratio (Alternates/ Minimum)	Number of Schools (<= 1.5 mile)	Ratio (Alternates/ Minimum)	Potential Housing Exposure (<= 1.5 mile)	Ratio (Alternates/ Minimum)
Route 1: I-10, I-110, SR-47	2,899,226	1.89	414	1.74	1,600,223	2.33
Route 2: I-10, I-710, Seaside Fwy	2,059,194	1.34	294	1.24	873,055	1.27
Route 3: 1-605, I-105, I-710, Seaside Fwy	1,533,451	1.00	238	1.00	686,578	1.00
Route 4: 1-605, I-105, I-110, SR-47	1,890,108	1.23	342	1.44	981,933	1.43
Route 5: 1-605, SR-91, I-110, SR-47	2,283,461	1.49	291	1.22	1,084,580	1.58

According to Title 49 CFR Section 397.103, routes should be selected to adequately consider overall risk to the public. Comparing these 3 routes, Route 3 has the shortest distance and estimated driving time, the lowest population and housing units, the fewest schools, and the least population density per mile in neighborhoods within 1.5 miles from the route based on the protection of people at night specified in the Emergency Response Guidebook (ERG) for large spills of RAM published in 2012 by the USDOT. Even though Route 1 possesses the lowest accident rate at 0.57 collisions for every million vehicle miles traveled per year, it passes through the highly populated area of downtown Los Angeles and has the highest relative population risk at 71,896 people per million vehicle road miles traveled. Among Route 1, 2, and 3, Route 3 still shows the lowest relative population risk at 52,604 people for every million vehicle road miles traveled. Combining together the considerations on route length, surrounding population, and accident rate, Route 3 has also the lowest relative population risk along the entire route while Route 1 and Route 2 are 89 percent and 34 percent higher, respectively. Thus, among these 3 routes, Route 3 represents the best option for vehicles transporting HRCQ RAM between the existing designated routes and the LB/LA Ports.

During the analysis, it is notable that I-10 between El Monte and Monterey Park has the highest accident rate at 0.85 collisions for every million vehicle miles traveled per year while I-110 and SR-47 have the lowest accident rates below 0.5 collisions for every million vehicle miles traveled per year. In order to more utilize I-110 and SR-47 without I-10, 2 additional routes were considered and compared to Route 3. Different from Route 3, Route 4 goes farther on I-105 and then takes I-110 and SR-47 to the LB/LA Ports and Route 5 goes farther on I-605 and then takes SR-91, I-110, and SR-47 to the LB/LA Ports as illustrated in *Figure 2*. The characteristics of these 2 routes were also derived and added into Table 1, Table 1.1, and Table 1.2.

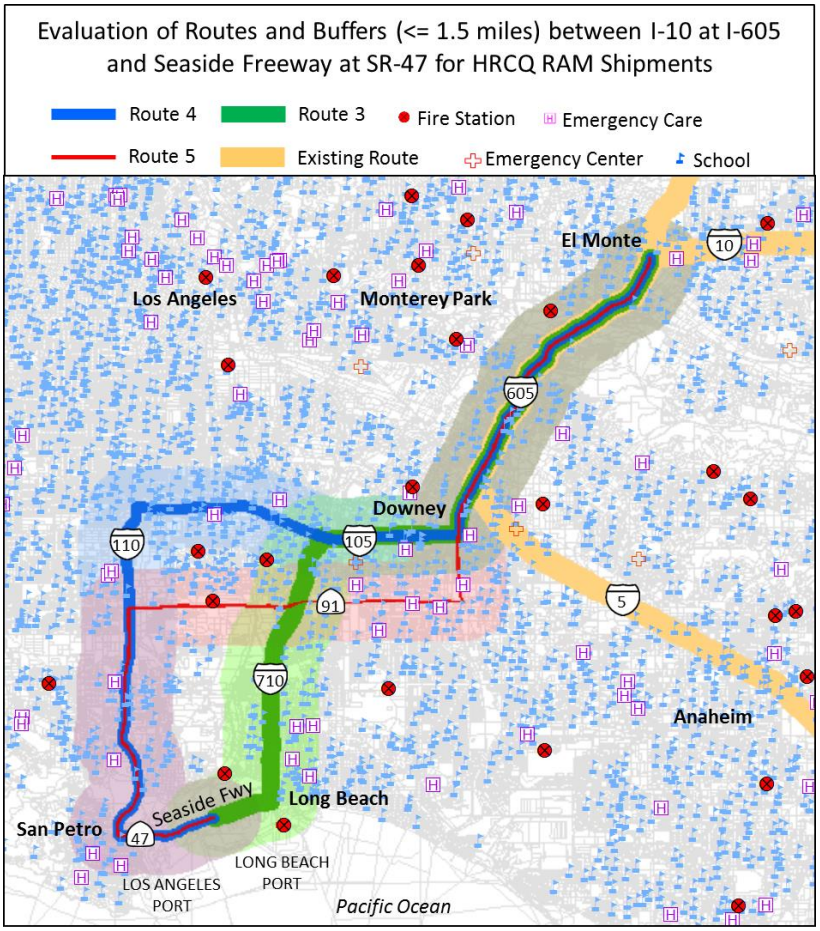

Figure 2: Route 3, 4, and 5 Evaluated for Transporting HRCQ RAM between El Monte and the LB/LA Ports

Compared to Route 4 and 5, Route 3 still has the shortest distance and estimated driving time; the lowest population and housing units; the fewest schools; and the least population density per mile in neighborhoods within 1.5 miles from the route. However, Route 4 utilizing a longer section of I-110 and SR-47, possesses the lowest accident rate at 0.58 collisions for every million vehicle miles traveled per year and also has the least relative population risk at 48,022 people per million vehicle road miles traveled, about 10 percent or 50 percent less than the relative population risks of Route 3 or Route 1, respectively. Thus, so far, both Route 3 from the east and Route 4 from the west to the ports present preferable characteristics to be used as designated routes.

Based on the Truck Networks on California State Highways published and updated by Caltrans, the section of Seaside Fwy east of SR-47, or marked between mile post marker (MPM) 3.429 and MPM 4.96 of I-710, is not a National Network truck highway established by the Surface Transportation Assistance Act nor a Terminal Access or California Legal truck highway. Thus, highway commercial vehicles transporting HRCQ RAM would not be driven legally on this section of Seaside Freeway to connect the LB Port and the LA Port. While both Route 3 and Route 4 represent the best options for being designated as the HRCQ RAM routes, Route 3 may

be used as the shipment route for the LB Port and Route 4 may be used as the shipment route for the LA Port, as shown in *Figure 3*.

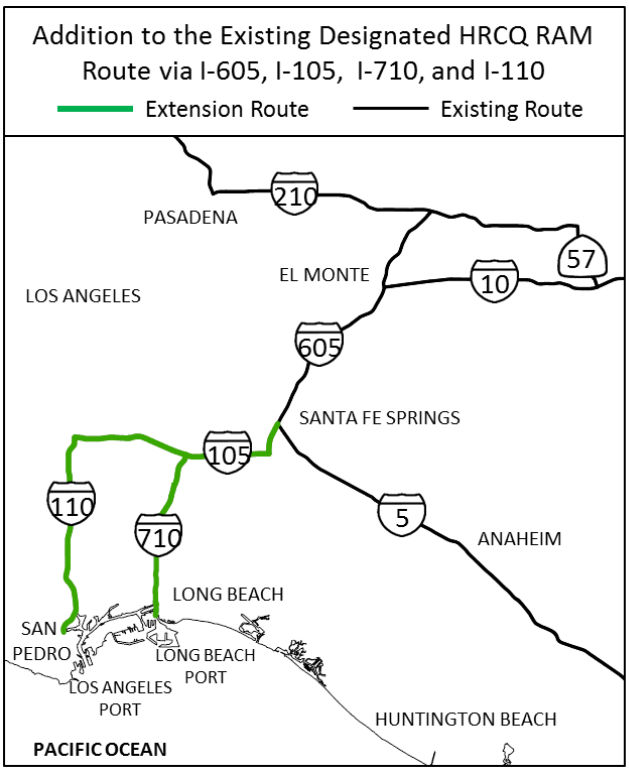

Figure 3: Extension of the Existing Designated Routes for Transporting HRCQ RAM using the LB/LA Ports

Route 3 includes a section of existing designated HRCQ RAM route with 10.6 miles of I-605 from I-10 near El Monte to I-5 near Santa Fe Springs. After further excluding Seaside Fwy east of SR-47, adopting Route 3 may designate an additional total of 17 miles of I-605, I-105, and I-710. Beyond Route 3, adopting Route 4 may designate a total of 19 miles of I-105 and I-110 while making SR-47 the local pickup and delivery route. Compared to other alternative routes, this small addition of 35.6 miles of interstate between the existing designated routes near Santa Fe Springs and the LB/LA Ports offers the HRCQ RAM carriers distance and time-saving routes with less risk imposed to population, housing, and schools without traversing through the downtown Los Angeles area.

In summary, for the highway commercial vehicles transporting HRCQ RAM in the state, this proposed amendment will add 1.9 miles of I-605, 10.5 miles of I-105, 10.4 miles of I-710, and 12.8 miles of I-110 between the existing designated route on I-605 near Santa Fe Springs and the LB/LA Ports. As a total, the CHP is proposing to add these 35.6 miles of highway sections to the existing designated HRCQ RAM routes in Title 13 CCR Section 1159 to avoid the transportation of HRCQ RAM on highways through Los Angeles by commercial vehicles except for picking up or dropping off shipments.

This amendment also deletes "(north of the city of San Diego)" in Section 1159 Routes (a)(1) in Title 13 CCR as an editorial revision since the intersection of I-5 and I-8 is self-explanatory in nature while no other intersection exists to cause a confusion.

STUDIES/RELATED FACTS

The evaluation of possible routes follows the recommended methodologies outlined in the Guidelines for Selecting Preferred Highway Routes for HRCQ RAM (DOT/RSPA/HMS/92-02) and in the Highway Routing of Hazardous Materials – Guidelines for Applying Criteria (FHWA-HI-97-003) published by the Federal Highway Administration of the USDOT. The data used for this analysis came from the 2010 census survey conducted by the US Census Bureau, the traffic volumes reports compiled by Caltrans, and the collision incidents collected by SWITRS database. The evaluation was analyzed using a geographic information system with a buffer zone within 1.5 miles of the routes referenced in the ERG issued by the USDOT, Pipeline and Hazardous Materials Safety Administration. After conducting the analysis, the USDOT published the 2016 ERG recently and changed the protection distance for RAM by large spills at night from 1.5 miles to 1.4 miles, which is covered inside the 1.5-mile buffers used in this analysis.

CONSULTATION WITH OFFICIALS

Concurrences were received from CHP field commands, SFM, DPH, Caltrans, SCAG, and major HRCQ RAM manufacturers and carriers. After contacting the Long Beach Unified School District three times for a consultation of this proposal without receiving any responses over a period of one month, the CHP is moving this proposal forward without further delay in order to enhance the public safety and security by prohibiting HRCQ RAM commercial vehicles traversing through the Los Angeles downtown area. Since these highway sections proposed to be added into the designated routes for the transportation of HRCQ RAM via the Long Beach and Los Angeles Ports have been used for a long time already, no opposition is anticipated.

ALTERNATIVES

No reasonable alternative considered by the CHP, or otherwise identified and brought to the attention of the CHP, would be more effective and less burdensome in fulfilling the proposed action. Additionally, the CHP has not identified, nor been made aware of, any alternative that would be less burdensome and equally effective to affected parties other than the action being proposed.

Alternatives Identified and Reviewed

1. Make no changes to the existing regulations. This alternative was rejected since it fails to reduce the potential risks associated with transporting HRCQ RAM between the existing designated routes and the LB/LA Ports; thus, it fails the CHP's mission to enhance public safety.

LOCAL MANDATE

These regulations do not impose any new mandate on local agencies or school districts.

ECONOMIC IMPACT ANALYSIS

Creation or Elimination of Jobs

The CHP has made an initial determination that this proposed regulatory action will neither create nor eliminate jobs within the State of California because the regulation only designates an additional 35.6 miles of HRCQ RAM routes and the transportation of HRCQ RAM by commercial vehicles along the designated routes presents only a very small portion of the total vehicle movement in the state. Additionally, this proposed regulatory action will not have a significant statewide adverse economic impact directly affecting business including, the ability of California businesses to compete with businesses in other states.

Creation or Elimination of New Business

The CHP has not identified any significant adverse impact on the creation or elimination of new businesses within the State of California. Businesses involved in the transportation of HRCQ RAM will have more consistent and updated information on designated routes in the state. The proposed regulatory action will not create or eliminate any new business by transporting HRCQ RAM via the updated routes.

Expansion of Business

The CHP has not identified any significant adverse impact on the expansion of businesses currently residing within the State of California. Businesses involved in the transportation of HRCQ RAM will have more consistent and updated information on designated routes in the state. These businesses will not experience any significant burden or impact from transporting HRCQ RAM via the updated routes.

Benefits of the Regulation

This proposed regulatory action will continue to provide a nonmonetary benefit to the protection of health and welfare of California residents, worker safety, and the state's environment. The changes to the application of the regulation are not substantive, and bring the regulation in

conformance with existing statute. Adding safe and efficient routes designated for carriers transporting HRCQ RAM is clarifying in nature for transportation safety and public health.

FISCAL IMPACT TO THE STATE

The CHP has determined these regulation amendments will result in:

- No significant increased costs for transporters of HRCQ RAM;
- No significant compliance costs for persons or businesses directly affected;
- No discernible adverse impact on the quantity and distribution of goods and services to large and small businesses or the public;
- No impact on the level of employment in the state; and
- No impact on the competitiveness of California to retain businesses, as the regulation amendments will enhance the safety of transporting HRCQ RAM.